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MANNERISM IN POSING.

NO branch of professional portrait photography is more justly subject to severe criticism than that technically known as "artistic posing," let any one with an artistic eye, examine the samples displayed in the show-cases along any of our prominent thoroughfares, the result will be that the beholder cannot fail to be struck with the great similarity or mannerism in the pose, in the majority of samples displayed, not only in each individual exhibit, but an almost universal duplication in the lighting of the specimens shown by some leading photographer of the town.

Few are the changes from what may be called the stereotyped mannerism, the exception being in theatrical subjects who refuse to be "took" in the regulation manner, and demand a characteristic pose.

To the general public, and we may say in the mind of the amateur photographer, nothing seems simpler than lighting and posing, yet in practice no photographic problem is more difficult, and less studied by the great majority of professionals. A photographer will occasionally get hold of a sitter with a fine characteristic head. He gets his subject into a position, we will say by accident or good luck, where the lighting will bring out all the striking characteristics, the resultant picture will be all

that can be desired, and prove a drawing card—admired by art lovers and extolled by the press. Now what is the result—for the next year or two, every sitter, male or female, from infant to tottering patriarch, will all be posed in precisely the same light, angle and position. No matter how unsuitable it may be.

Then again, this man's competitors, spurred on more or less by the free advertisements given, in the first instance, for the marked or successful portrait, will attempt to imitate that particular effect, which results in a decidedly unhealthy state of affairs, so far as individuality of pose and artistic effect are concerned.

To what an extent this mannerism in posing is carried, was brought prominently before the writer's notice a few weeks ago. Thirty-two cabinets were sent to him for arrangement into groups and for reproduction; they were all prominent men, and the photos were taken by the leading photographers of this city. In this lot twenty-four were the work of one firm of deserved reputation. In technique, style and artistic effect they were above criticism, when taken singly,—but when the attempt was made to make up the desired groups it was another thing, as twenty-one out of the twenty-four were all posed, lit and photographed in almost the same position. To make a group with every head the same pose and looking in the same direction was out of the question.

In some cases the originals or their families had to be appealed to for different pictures taken elsewhere or by different artists, so as to overcome the sameness, or the artist's mannerism in posing. In one instance, where the original was deceased and no other portrait was attainable, a reverse negative had to be made to partly overcome the uniformity.

No matter how artistic that artist's particular drawing card appeared singly, when taken eight- or ten-fold the mannerism became painful to the eye and the subjects useless for artistic grouping.

Most professionals naturally will at once say that every portrait is taken singly, and upon its own merits alone, with no reference whatever to any future combination or grouping. Granted that this is the case, the artist photographer should

know that no two heads will light up the same under the same conditions: there is always a something, a difference in the lines or features, that prevents the photographer from duplicating the same effects of light and shade upon two different subjects, even if the chair and head-rest are kept in the exact position for both. The photographer who strives to cut loose from a set style of mannerism in posing will soon see the wisdom of the course.

Let the specimens in the show-case or display-window be as varied as possible. Show studies of the face at all angles. If the operator is not up in the art of posing, or lacks experience in judging the effect of the light on the various angles of portraiture, he can by a simple device greatly improve himself. Let him buy a life-size plaster cast of any of the Greek marbles, such as are sold by Italian image venders in every large city; then place the head at any angle or light in the studio, focus, and study the effect of lighting and shadows on the ground glass by turning the bust, increasing and decreasing the illumination. The effects can be studied far better than upon a human subject.

The photographer should always bear in mind that expression is essential to a portrait, and no matter how glossy the aristo may be, it will be worse than worthless if the pictured face fails to reproduce the inviduality of expression of the original.

This result can only be obtained by studying the features carefully, posing so as to keep the expression and lighting so as to avoid all false shadows.

In this particular branch of our art we are to-day not so far advanced as were some of the early pioneers who practiced the Daguerreotype art half a century ago, when every face and figure was carefully studied by the operator before the final pose. Take, for instance, some of the efforts of the late Marcus A. Root, that are still in existence, unexcelled for expression and beauty of finish, and no two alike in pose. It would be well for the present generation of operators to study, wherever they can, specimens of such old masters in the heliographic art as Root and Mayall, both originally from Philadelphia, but subsequently of world-wide reputation.

JULIUS F. SACHSE.

DRY PLATES FOR PROCESS PICTURES.

NOT the skilled operator, but the tyro permits his mind to become muddled and his spirit vexed by the question of the suitability of using dry plates for process work. An English authority on the subject says in a recently issued trade circular that dry plates have on various occasions been satisfactorily employed, and that at least one firm in London is now using dry plates only, even for the most delicate half tone work with the screen.

In giving preference, however, to the wet collodion process the same authority commends its "ease, speed and certainty." To this, it is thought, may be consecutively echoed: Ease! Why, what can be easier than to pop a ready-made plate into the dark slide?" "Speed! Can a collodion plate ever rival a gelatine plate?" "Certainty! Why nothing can be more definite than and so certain as the dry plate processes."

These curt arguments sound well to the attent ear, but sound seems to be all there is in them. When trying to get results from dry plate theories the trouble begins, and very soon the ideas bulge at the knees or crease in the back. Those who try dry plates for photomechanical reproduction of book illustrations complain first and foremost and chiefly that they cannot obtain clear lines.

If clear lines are obtained there is a lack of density. Such faults may be minimized by careful manipulation and by using selected plates; but wet plate perfection can never be reached, simply because the fault is inherent to the gelatine. Taking into account the scientific fact that while collodion has so little effect upon the silver salt, it may be regarded as inert, the other fact must not be ignored that gelatine renders the silver extra sensitive, and hence tends to the spreading and veiling, which together become the bane of all process workers with dry plates.

Further than this, it is known that the bromide of silver of a gelatine plate gives a less opaque film than the iodide of silver of the collodion film does—hence the light passes through and hala-

tion results. Gelatine plates are also more susceptible to stray light, whether arising from a weakly constructed camera or traceable to a poor lens or a badly framed dark room.

The expert operator, who is here partly quoted, says that if the makers of gelatine plates would closely study the needs of workers by process they might readily deduce from these things the proposition that if a plate were to be thinly filmed with gelatine, but heavily charged with iodide of silver and kept down to the average sensitiveness of a wet plate it would be the ideal dry plate for picture makers by process.

As, however, things must be taken as they are, and certain conditions are invariably present, while others more desirable seem to be among the impossibilites, it is wise to endeavor to reduce "spreading" to a minimum. Having selected the lantern plates most suitable for black tones, they must first be backed with paper for the purpose of minimizing halation. Gummed orange paper is conceded to be preferable—almost always superior.

The lens is then screened with a conical funnel about a foot in length. This funnel is blackened inside. The "copy" must be well lighted, or density combined with clearness of line will never be gained, no matter how long the exposure. For securing both clearness and density the following formulas will be found practicable in developing:

A.

Hydroquinone	80 grains
Citric acid	10 "
Sulphite of soda (pure)	80 "
Distilled water	20 ounces

B.

Caustic potash (fused sticks)	160 grains
Sulphite of soda (pure)	160 "
Distilled water	20 ounces

C.

Bromide of potassium	24 grains
Distilled water	1 ounce

Equal parts of A and B are taken for plates correctly exposed. In case of over exposure ten or twelve drops of C are added to

each ounce of solution. When the exposure is insufficient a few grains per ounce of sulphite of soda are added. Much more satisfactory will it be to arrive at the correct exposure by trying a small plate than by dodging the development, which must be stopped when the plate begins to gray all over and the image shows well through at the back.

If sufficient density has been gained, but there is not enough clearness, a remedy—which should be sparingly used, however—is to place the plate (after fixing) into a solution prepared by washing two or three crystals of ferri-cyanide until they are clean and of a bright ruby tint; then, after agitating a few seconds, pouring into this solution the hypo in which the negative has been fixed. Generally the reduction is very rapid and necessitates careful watching. Next, the negative itself must be thoroughly washed.

Nothing is better for intensifying than the bichloride of mercury and ammonia method, but such a resort ought not to be necessary. Borrowing the language of one who has experimented up to his neck with both gelatine and collodion, it may yet be asserted that the path of the too confident worker with dry plates is beset with difficulties which do not end with the taking of the negative.

The New Art Fad.—A photograph is supposed to be a transcript of nature, and whilst from our tools we are compelled to admit that we cannot reproduce its tones faithfully, yet there is no need to go out of our way to misrepresent things. Of course if our photograph is intended to be merely "A Note," "Toccato," "Mezzo-Soprano," or any other high-sounding title, all well and good, but if we give it a title and call it "A Sunrise" or "Sunset," then let us try and be truthful, and not misrepresent things. Under-exposed or under-developed pictures deeply printed, may give us what we want, and there is no harm in making such studies to show our cleverness or power over the tools we use, but do not let us put them forth as faithful representations of nature, or the world may well say we see nature with a jaundiced eye, and are little better than "anthropomorphous simians" or worse.—*The Amateur Photographer.*

THE POLARISATION OF LIGHT PRACTICALLY APPLIED TO PHOTOGRAPHY.*

BIRT ACRES.

IN bringing this subject before you to-night it is my intention to dwell more particularly on its application to photography. The polarisation of light is a beautiful subject, and will well repay investigation, but in this paper I can only touch on the general outlines of the accepted theories in connection with it, confining my remarks to methods of utilizing the peculiar properties which certain bodies possess of being able to polarize and analyze light, thus enabling us to secure better photographs of natural objects, oil paintings, etc., than can be obtained by ordinary means.

We are all familiar with the troublesome reflections which emanate from polished surfaces, producing when photographed such exaggerated effects of light and shade in the resulting photograph as to make it a mere caricature of the original. Take as an example a photograph of laurels or ivy in sunshine—it has exactly the appearance of a snow picture; the same holds good in nearly all photogr phs of foliage taken in direct sunlight. In photographing machinery the difficulties are so thoroughly recognized that it is quite the usual thing to cause all the polished parts to be covered with tallow and white lead or some such composition before attempting to photograph it. Now I propose this evening endeavoring to show how it is possible to overcome some at least of these exaggerations, and before proceeding further it becomes necessary to say something about the nature of light and the laws of reflection and refraction. We are all quite familiar with the dictum that it is only possible to photograph objects that reflect light to the sensitive plate, and this is perfectly true; but we must go a little deeper into the matter. When a ray of light falls at an angle on to a plain polished surface the greater part of it is reflected at exactly the same angle in the opposite direction; but all of the light is not reflected in this

* Read before the Photographic Society of Great Britain, April 10, 1894.

way,—some of it is dispersed in all directions by the surface of the glass (more or less as the glass is well or badly polished), and a considerable portion of it penetrates through the glass and is refracted.

Fortunately for us in dealing with light and optics we are dealing with an exact science; its laws are so well established and so well understood that we are able to speak with almost absolute certainty in regard to most of the phenomena presented. Thus if we prepare an absolute plane silvered mirror perfectly polished and allow a beam of light to fall on to it at say an angle of 45° to its surface, directly this beam of light touches the surface it will be sent off (or reflected) at an exactly similar angle to the surface, viz., 45°; if we alter the position of the beam of light or the reflector so that the light forms any other angle, say 30°, with the surface, then will the reflected beam of light also form an angle of 30° with the surface. This proves one of the first laws of light, viz., that the angle of reflection is equal to the angle of incidence. This law is of the utmost importance to photographers, and must be borne in mind in all sorts of photographic work.

I have just spoken of the dispersion of light by the surfaces of bodies: it is this dispersed reflected light that enables us to take successful photographs. Let us go back again to our well-polished silvered mirror: let us imagine that its surface is so perfectly polished that no light is *dispersed* by its surface at all; take it into a dark room and allow a beam of light to fall on it at an angle say of 30° to its surface, and look at the mirror from any point except the opposite angle of reflection; it will appear quite black, because it does not send any light to the eye at all; but breathe on the mirror and immediately it appears white, because the moist breath being condensed on the surface in myriads of minute droplets, causes dispersion of light in all directions at the surface; but continue the breathing operation until so much moisture is formed that the droplets unite to form a thin sheet of water, then the mirror is again restored to somewhat of its former power of perfectly reflecting light. This experiment shows at once that we cannot photograph a perfect reflecting surface,—we

can photograph objects reflected by the surface, but the surface itself, sending no light to the eye or the sensitive plate, produces no effect on either. With the refraction of light we shall have very little to do this evening, as we do not photograph the truly refracted light except so far as it may be again reflected, but in order to make the whole matter clear, take a piece of ordinary plate, glass which in consequence of careless handling has had its surface polish very slightly dulled, and allow a beam of light as before to fall on it, say at an angle of 45°, we shall then have all the phenomena just described well illustrated thus. The imperfectly polished surface will scatter some light, hence the surface will be visible from any point above its surface; a portion of the light will be reflected at the same angle as the light fell upon the plate, depending in quantity of course on the more or less perfectly polished surface, and a further portion of the incident beam will pursue its way through the glass, a part of which will also be reflected at the inside under surface of the glass, which will obey the same law of reflection as that reflected by the top surface, but these two reflections will not coincide, varying in relative position with the thickness of the glass and the angle at which the light falls on the glass, and the remainder of the light will penetrate entirely through the glass. Now it will not require very much consideration for us to arrive at the conclusion that if we wish to successfully photograph this piece of glass there are three positions where the lens must not be placed: it must not be in the line of reflection from either the top surface or the under surface, neither must it be in the line of light that has passed through the glass, otherwise instead of photographing the glass we shall only succeed in photographing the reflection of the source of light; but it is not always possible to place the lens in such a position that it will not receive this direct reflected light, therefore we must adopt some other means of getting over the difficulty.

When the light reflected from a polished surface forms a certain angle (which depends on the refractive index of the material), the reflected light is said to be polarised. For water this angle is 52½°, for glass 58°, whilst for the diamond it is as high as 68° Sir David Brewster has proved the angle of polarisation of a

medium to be that particular angle at which the refracted and reflected rays enclose a right angle. The law is expressed thus: "The index of refraction of any substance is the tangent of its polarising angle."

A very large portion of the light reflected from objects is therefore polarized, but this polarisation, as it is called, does not produce any visible effect unless some means are employed of analyzing the polarised light, and the object we wish to attain is to be able to extinguish portions of this reflected light before it reaches the photographic plate. You are all doubtless acquainted with the peculiar property of double refraction which is possessed by Iceland spar (and some other crystals in a less marked degree), that is, that when an object is looked at through the spar two images of the object appear, or if a perpendicular beam of light is allowed to fall on to it, two beams of light emanate from it at the opposite side. I dare not attempt to take up your time by going into the wave theory of light, which is, I presume, familiar to most of you; but for the information of those who have not studied the subject, double refraction is accounted for by the wave theory of the propagation of light on the assumption that when a beam of light enters a crystal of Iceland spar its vibrations (which are across the path of propagation) are reduced to vibrations in two directions only, which are at right angles to each other. A very clever optician by the name of Nicol conceived the idea of utilizing this peculiar property of Iceland spar to enable him to analyze and examine polarised light, and reasoning that as the beam was split into two portions by the spar, these beams must be traveling through the crystal at different angles, he therefore took a crystal of spar, and, cutting it anglewise, carefully polished the cut surfaces and cemented them together again with Canada balsam. The angle at which the crystal was cut was of the requisite angle to ensure the total reflection of the more refracted ordinary ray, whilst the less refracted secondary or extraordinary ray was allowed to pass straight along. With the aid of a piece of spar adjusted in this manner (which is now universally known as a Nicol prism), we are able to examine the phenomena of polarised light with ease. Thus

allow a ray of light to fall on a polished surface—say water—at its polarising angle, 68°, standing in such a position that the light is reflected direct to the eye, and adjust a Nicol prism so that this reflected light passes through it in the direction of the eye, but hold the longer axis of the face of the prism so that it is perpendicular to the reflecting surface (water in this case), the ray of light will be still freely transmitted to the eye; now slowly revolve the prism but keeping it in the same direction, and gradually the reflected light will begin to disappear, until when a quarter revolution has been reached the reflected light will disappear totally, and all the light that will reach the eye through the prism will be that which is reflected from the surface of the water at other angles, and therefore not polarised; continue to revolve the prism and the reflected light will gradually reappear; when half a revolution has taken place the light will appear as brilliantly as at first: continue revolving until three-fourths of a revolution has been made, the light will again disappear, to reappear again when a full revolution of the prism has been made.

We now come to the practical application of this piece of apparatus to photography. Point the camera and lens to any difficult subject to be photographed, such as the shiny smooth leaves of laurel or ivy, or even polished furniture; on looking at the ground glass we find the light reflected in patches which, if a photograph were taken, would give a very poor representation of the original; the direct reflected light would come out as hard patches of white, causing a soot and whitewash appearance that would be very unsatisfactory; but place a Nicol prism in conjunction with the lens and revolve it until its longer facial axis is at right angles with the principal direction of the incident light which is reflected to the ground glass, and it will be seen that a very large portion of this objectionable reflected light has disappeared It is really totally reflected into the mount of the Nicol prism, and if a photogroph were now taken the result would be precisely similar to the image projected on the screen, the hard patches of light would have disappeared, and the photograph would be a much more truthful portrayal of the original. It should here be noted that although the reflections as seen by

the lens are true to nature, yet the photographic plate so enormously exaggerates them that the resulting photograph is anything but truthful. In copying oil paintings this method will be found of the greatest service, as it is impossible in most cases to adjust the camera in such a position that reflections from the irregular surfaces of the brush marks will not appear on the ground glass, and finally on the sensitive plate.

Unfortunately I have now to introduce a very big "but," and that is the great scarcity of really perfect large crystals of Iceland spar. Large prisms suitable for big lenses cannot be obtained for love or money; perhaps the latter assertion must be modified, as Messrs. Baker, the scientific apparatus makers of Holborn, told me a few days ago that they had recently sold two Nicol prisms of about three inches in diameter for a sum of between £300 and £400. I should here say that I am indebted to Messrs. Baker for the loan of the rhomb of Iceland spar which I have used this evening for the purpose of illustrating double refraction. The moderately large Nicol prism that I have used in my experiments I obtained several years ago from Messrs. Newton, of Fleet St.

Fortunately, however, there is another method of analyzing polarised light, and therefore we are not dependent on such scarce and costly articles. We have seen that light may be polarised by reflection from polished surfaces as well as by refraction with Iceland spar, and if we place a mirror in front of the lens in a suitable position we are able to produce all the phenomena of extinguishing reflections quite as satisfactorily as if we used a Nicol prism, and although this gives what is known as a reversed negative, it will doubtless be hailed as a boon by a large portion of the numerous photographers, both professional and amateurs, who are now taking up the carbon process, as prints can be made from such negatives by the exceedingly simple single transfer process that give all the parts of the picture in correct relation to each other just the same as if a double transfer print was made from a negative taken in the ordinary manner.

The reflector should be so adjusted that it can be rotated round the lens, that is to say, that it may receive the image from above, below, or from right or left of the axis of the lens, and also that

it should be hinged so that the angle formed by the reflector and an imaginary line drawn through the axis of the lens may be increased or diminished according to the direction of the incident rays which are reflected from the objects to be photographed.

As an example suppose it is desired to take a photograph in a deep wooded glen, the principal direction of the incident rays which are reflected from the foliage, etc., will be from above, then the mirror should be placed below the lens and the camera sufficiently tilted to take in the view. If instead of being above, the light incident to the objects to be photographed is from the right or left, then it may be necessary to place the reflector on one or other side of the lens.

A silvered mirror does not seem to answer the purpose very effectively, but I have found for photographing the difficult pale cirrus clouds on a blue sky that a black glass mirror gives the most remarkable results, and I have also obtained striking results in photographing foliage in this way.

It will sometimes occur that the reflections that it is desired to obliterate are not at the polarising angle, and so are not amenable to either the Nicol prism or the reflecting mirror; in such cases I have employed both mirror and Nicol prism, that is to say, mounting both in front of the lens, polarising the light with the mirror, and then analyzing it with the Nicol before it reaches the plate. In this way with care some excellent results may be obtained, but by this method it is possible to cut off nearly all the rays reflected from the object, hence a very long exposure would be required, but by carefully adjusting the relative position of the reflector and Nicol, almost any desired result may be obtained.

I have intentionally avoided touching on all the reasons why and wherefore the results I have described are produced, as I intended this paper to be principally photographic. To attempt to explain all the reasons fully would take up the rest of the session of this Society, but anyone who cares to dip into the subject of reflection and refraction of light will find a new world of interest opened up to him, in which there are still many discoveries to be made.

I would like at once to disclaim any priority for the investigations that I have been making. I know that there is "nothing new under the sun," and that "all is vanity" just as much in the modern photographic world as it was in the days when those memorable words were uttered. I have been told that about twenty-five years ago that much respected and undeniably great authority upon photographic optics, Mr. J. Traill Taylor, Editor of the *British Journal of Photography*, published some notes on the effect of examining the reflected light from the foliage of the laurel by means of the Nicol prism, but as I have not seen the notes referred to I cannot say for certain whether he took photographs under such conditions, and I have heard that a patent has been taken out recently for the use of the Nicol prism in conjunction with the lens, but I would like to at once anticipate a question which I know some of our friends are burning to ask, and that is that I have not taken out any patents in connection with the subject, and have no commercial interest in the matter whatever, but just offer these few suggestions in the hope that they may lead others who have more time than is at my command to follow up the subject.

Light can only be totally reflected when endeavoring to escape from a more refracting to a less refracting medium, water to air for example.

The refractive index of Iceland spar is for the extraordinary ray less and for the ordinary ray greater than Canada balsam, hence in passing from the spar to the balsam the extraordinary ray passes from a less to a more refracting medium, hence total reflection cannot take place, while the ordinary ray passes from a more refracting to a less refracting medium, when total reflection can occur.

Amateurs.—There are amateurs and amateurs. These young people with a little learning are the sort of people who do the professional most harm. An injudicious amateur does a great deal of injury, and he will often run in and deprive a professional of work.—*Thomas Fall, in Photographic Experiences.*

COLOR-SENSITIVE PLATES.

FOR a long time color-sensitive plates have been slowly and laboriously fighting their way to the front in landscape work, and even now are receiving but tardy recognition at the hands of many eminent and advanced workers. In too many cases have they been handicapped by what might be termed unjust weights, that is to say, many of those who advocate the use of color-sensitive plates have not been averse to either placing a bit of lead in the scale of the color-sensitive plate or else have not fairly treated the ordinary plate. And again, color-sensitive plates have been unfairly treated by the use of improper screens, making the results thus err as far on the one side as the ordinary plates do on the other. In connection with this subject we must draw attention to a well-considered article by Bothamley in the "Year Book of Photography," 1890, pages 59-61, wherein he says, "Now and again photographers, whilst recognizing the differences, will express a preference for the results on the ordinary plate. Here it would seem that use is, in most cases, the main factor in the formation of an opinion. It may be fairly said that very few photographers trouble themselves at all about 'values,' whereas a knowledge of values, though difficult to acquire, is one of the most important parts of an artist's training. Results on ordinary plates, which most photographers have grown accustomed to regard as excellent, are necessarily more or less wrong in their values, and because they regard these as excellent, they look upon results which are correct in their values as inferior. Moreover, landscape photographers have become accustomed to rely upon the imperfect rendering of greens to provide them with the dark masses necessary to the production of pictorial effect. To have to depend entirely upon the lighting for these dark masses is a new experience. A point of view and direction of light which is the most suitable for an ordinary plate is by no means necesarily the most suitable for an orthochromatic plate. The different properties of the new plates involve modifications in long-established modes of work, and what is

familiar is preferred, as is so commonly the case, to that which is unfamiliar, quite apart from any consideration of the truth or excellence of the result. We are apt to cling very tenaciously to old habits of thought and practice, and

". . . . . Truth new-born
Looks a mis-shapen and untimely growth."

We have here as well worded a piece of description of one of the reasons why everybody does not adhere to color-sensitive plates for outdoor work as can be written, and therefore we shall content ourselves with a few preliminary remarks and then detail the advantages accruing from the use of such plates, when used properly and with brains.

All natural objects reflect some of the constituent rays of light from their interior parts, and thus obtain their color, but at the same time they also reflect from their exterior surfaces a good deal of white light, and it is this white light which nullifies the effect of the colors and makes the difference between the ordinary and the color-sensitive plate so small at certain seasons of the year. That this difference may be accentuated by the use of a screen we have already pointed out in the note devoted to that subject.

In the spring and autumn, at which season yellowish shades of green or yellowish brown shades predominate, the value of color-sensitive plates is fully appreciated, or we should say is fully apparent, but in summer, when a great deal of white light is also reflected, this difference is not so great *without a screen.* With a suitable screen the advantages of a color-sensitive plate are: (1) improvement in the rendering of distance; (2) a better rendering of the different shades of green of various foliage, grass, etc.; (3) finer detail and softness in water, and true or truer rendering of the reflections; (4) in snowy weather, fine detail in the whites, and better rendering of the detail in the shadows. Taking these points in order, we come first to (1) improvement in the the rendering of distance. This is especially seen, as we have previously shown in our note on screens, when the distance is shrouded in blue mist, or when the distance includes mountains, either snow-covered or not, at the same time.

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A POULTRY YARD IN THE CHESTER VALLEY.

(SEE PAGE 276.)

Although we may be accused of repetition, we would lay great stress on the use of a suitable screen, not too dark, or the results obtained are as wrong now as they would be on the ordinary plate. With the latter they would be lost entirely; with the former the distance would be too distinct, and the actual distance or artistic atmospheric effect be lost.

The second point, a better rendering of the different shades of green of various foliage, grass, etc. This point hardly requires any proof to any one who has actually worked color-sensitive plates.

The third and fourth points will be conceded by everyone after a fair trial of comparative exposures on the two different kinds of plates.

In sunset scenes, where the whole illumination is practically yellow or at least yellowish, the superiority of the color-sensitive plates is strikingly apparent, and in such cases no yellow screen will be required, and the operator must bear in mind that comparatively shorter exposures will be required with such plates than with ordinary plates, because they are so much more sensitive to yellow; the shadows illumined by blue skylight.

For clouds and seascapes we again come to two branches of photographic work in which the value of orthochromatic plates will be fully realised; in fact, the writer believes that it is only with such plates and a yellow screen that all the fine gradations of modelling, the varying lights and shades, and, above all, "the silver lining" to clouds can be faithfully and actually portrayed, especially in the last case, where the silver lining is almost as actinic as the darker heaven's blue against which it is seen. For actual work we have already suggested a method of procedure.

Snow pictures, as a rule, are the least satisfactory of all turned out on ordinary plates. In too many cases the snow appears as blank white patches devoid of all modeling, and heavy contrasts of black trunk trees absolutely bare of any suspicion of detail, and a sky rivalling the snow, or else surpassing it in brilliancy of whiteness. Yet in nature how seldom in fact do we ever see such a state of things—true that the snow is often in white unbroken patches, but still in the white there is detail in the foreground,

whilst the distant snow shades off into a pearly white; the tree trunks show dark, still there is detail; and the sky is not always an unbroken grey, or pale blue, sometimes flecked with more or less huge masses of the well-known snow clouds, and never do we see it so brilliant in luminosity as the snow. For such a scene as we have here sketched, let us use a medium-rapidity plate, a second tint screen, and a comparatively long exposure; hat is to say, let us expose for the shadows and leave the high lights to take care of themselves, according to the rather trite but praiseworthy axiom. Then in developing if we keep the pyro low, so as to avoid too great density, we shall obtain white snow full of detail, trees that are no longer black patches, and a sky of tender grey with relatively correct value as compared with the snow.

For such objects as monuments, ruins, gardens, and flower-beds, color-sensitive plates will be of great value, and the especial advantage of having a plate more sensitive to green in its various shades will be found when taking sylvan scenes, such as sunlit glades, forest groves, etc.

—*The Amateur (London) Photographer.*

Amplitudes of Light Waves.—Unlike the wave lengths, of which extremely accurate measurements have been made, the amplitudes of light waves in the ether have thus far only been guessed at. It is said, however, that in the investigation of Hertzian radiation, in connection with the generation of Hertzian waves, an avenue of experiment may be opened up whereby the amplitudes of the waves could be determined. Again, experiments that have been tried on the polarizing action of semi-metallic diffraction gratings bear directly upon the matter in question. We refer to such gratings as can be made by the ordinary process of ruling with a diamond tool upon a glass plate coated with a very thin layer of silver or other metal.—*The Optician.*

Most people would be most pleased with a negative where the shadows were simply softened here and there where they are hard; that is legitimate.

PHOTOGRAPHING A FLYING BULLET.

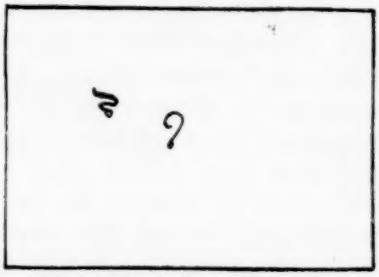
AMONG the pictures shown at the late exhibition of the Society of Amateur Photographers of New York at the American Fine Arts Galleries, No. 215 West Fifty-seventh St., and which were not thought to be worthy of any recognition by the board of amateur judges, was a set of seven photographs of a rifle bullet taken during flight, by James E. Goold, of Newcastle-on-Tyne, England. These were taken by means of the electrical spark caused by the bullet closing the gap between two wires and giving an exposure of about one-millionth of a second. This exposure is necessary to obtain a sharp image on the plate when the bullets are travelling at such a high velocity. Neither lens nor shutter is used. The velocities were, for the first bullet, between 1,500 and 1,600 feet a second, and for the magazine rifle about 2,100 feet a second (700 yards a second), or at the rate of 1,431 miles an hour. With the higher velocity it is shown that the air waves are more accute than with the Martini-Henri bullet. The white splashes seen in front of the Martini-Henri bullet were caused by the paraffine wax and fused metal sticking to the film of plate.

"A," showing wires struck by bullet.

"B," showing flight of bullet.

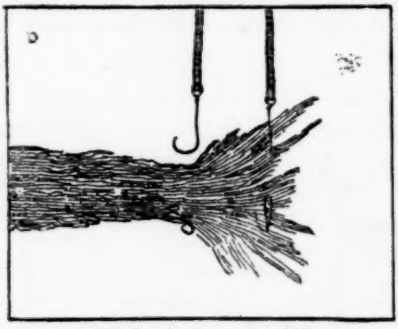
The photograph "A" shows the bullet having cut one wire and striking the other.

The photograph marked "B" is the most wonderful, showing, as it does, that a greater disturbance has been set up than in any of the others, and also showing the fused metal flying from the centre. There is a great number of air waves visible on the lower left-hand part of the nose, and the point where the deflection of the bullet first began can be seen in the wave. The bullet, having started on its flight with a slight elevation, is now flying downward.



"E," showing bullet and flying wires.

"E" shows the wires have just been hit and jumped up.



"G," showing loops just falling.

"G" shows there has been lag, as the powdered glass caused by bullet passing through the plate is visible, but the bullet has gone, the only trace of it being part of an air wave in left half of picture. If this line were continued up to path of bullet it would give somewhere about the position of the bullet when the spark was given off. The wire loops are just seen falling.

PHOTOGRAPHIC PROPERTIES OF THE SALTS OF VANADIUM.

BY MM. A. AND L. LUMIERE.

FROM a practical point of view the salts of vanadium, say the authors, do not at present appear important, but they have found that their expectations that some compounds of this metal might prove sensitive to light are realised. Vanadium forms four compounds with oxygen—the dioxide, Va_2O_2; trioxide, Va_2O_3; tetraoxide, Va_2O_4; pentoxide, Va_2O_5; which furnish four series of salts. The salts of the dioxide, Va_2O_2, are extremely energetic reducing agents, which cannot be isolated and are only known in the form of solutions. MM. Lumière have been able by their aid to develop in the following way the latent photographic image. When vanadic acid, is reduced by means of zinc in, for example, sulphuric acid the liquid from red becomes blue, then green, and lastly violet, containing successively vanadic, hypovanadic, and hypovanadous sulphate. It is this last which constitutes an energetic developer acting even if the solution is very acid.

Besides the possibility of using the hypovanadous compounds for developing the latent image, the vanadic salts are also interesting on account of the influence of light upon them. Vanadic acid or vanadium pentoxide dissolves in some acids, yielding yellow or red solutions of very little stability, water being generally able to decompose them. Of these vanadic solutions, the chloride, the phosphate, and the potassic-vanadic tartrate are the best so far as sensitiveness to light is concerned. The chloride can be formed by treating cold vanadic acid with concentrated hydrochloric acid. The red solution decomposes even by the addition of a very little water, and care must be taken to prevent the dilution of the liquid. This decomposition MM. Lumière have prevented to some extent by diluting the solution with a mixture of alcohol and water instead of with water. The presence of alcohol has a very marked action. If a sheet of gelatinised paper is saturated with this solution and dried in the

dark the substance is reduced by light, and by exposing under a positive a feeble print can soon be obtained, which can be intensified and fixed by the aid of various amines, etc., as pointed out by the authors in the case of manganic salts.

Vanadic phosphate, which can be obtained by treating vanadic acid with phosphoric acid at a temperature of about 150° C., is not so readily decomposed by water, but is correspondingly less sensitive to light. Potassic-vanadic tartrate is easily obtained by shaking vanadium pentoxide up in a solution of potassium bitartrate. The yellow solution so obtained admits of a very sensitive paper being prepared, which moreover can be kept without alteration for several weeks. The colour reactions which can be obtained with these different preparations are not very numerous and the images generally feeble. These imperfections may be attributed chiefly to the relatively feeble oxidising power of vanadic salts. The authors have sought for other reactions which shall take the utmost advantage of the difference between the exposed and unexposed sensitive material, but so far without success.

THE THEORY AND USE OF URANIUM COMPOUNDS IN PHOTOGRAPHY.

BY J. VINCENT ELSDEN.

AFTER dealing with the constitution and reactions of uranium salts, the author says that the history of uranium printing carries us back to the year 1804, when Gehlen discovered that an alcoholic solution of uranium chloride was decomposed by sunlight. In 1857 Burnett described before the Photographic Society of Scotland the effects of exposing paper impregnated with various uranium salts and developing them with potassium ferricyanide, silver nitrate, or gold chloride. In 1893 J. Worthly invented the process known as "Worthlytype." This process is described. The methods of other workers are given. Then follow sections on the use of uranium salts in negative processes (Worthly in 1872), in intensification, toning, and photometry.

RETOUCHING LARGE HEADS.

PHOTOGRAPHY has made considerable progress during the last few years. A high sensitiveness of plates and the rapid action of newly-constructed objectives have contributed mainly to the perfection of our technical work; but these facilities, applicable to every branch of photography, have been utilized by few operators only in the portrait line. Improvements made in æsthetic photography can be claimed merely by a select class, although efforts to do better are generally manifested. To make an artistically good photograph, and make it acceptable to a critical or refined public, requires taste in posing and good judgment in lighting the subject, not to speak of the technical part of the work. Besides all the requirements for a good photographic portrait, a certain amount of hand work is absolutely necessary, especially with direct large heads. One of the main tasks of the retoucher is the preservation of the general face character; all details should be seen in the finished picture, without deep and black shadows, and without, in comparison with them, chalky lights. Light draperies, and the highly illuminated parts of the face, show details, or gradations of tone, in a well-developed negative, and must remain so. The retoucher must improve the negative, where corrections are needed; by no means should the pencil encroach upon a field, by which finally the negative may be rendered entirely worthless.

To facilitate the artistic work of the retoucher, the technist should make a very large head upon a thin glass plate. If the negative be covered upon the reverse—that is the glass side—with ground glass varnish, retouching will be much facilitated. Pencils of various grades are necessary to shade in various ways, as the negative will require; often the stump and finely pulverized graphite may be resorted to. With them large surfaces may be bleached off, and a beautiful harmony given to the photograph. Wrinkles, deep lines, the pores of the skin, and accidental faults may be softened, so as not to interfere with the general effect, to do which, light and shade must remain well balanced. The very fact that large heads are never viewed in

close proximity to the eye, allows the retoucher to take certain artistic liberties with the subject before him. Negative retouching on the film side of the plate is very apt to smoothe whole surfaces of large heads, in such a manner as to lose all details, giving nothing but well polished planes, without any undulations, no matter how well they were rendered in the negative. Nothing but a loss of time, labor, and, possibly, of a good negative, can result from poor retouching.

The portrait painter obtains flesh effects with colors, but they are not available to photographers, and as our portraits are rendered in nothing but black and white, with intermediate gradations of tone, any possible faults of the negative, and strong shadows thrown by projections, can only be overcome by the retoucher's pencil. The positive on paper must be attended to with equal care. Mechanical faults may be taken away, and high lights be toned down. In no way should the positive retouching be coarse or hard.

A well posed and lighted large head, when the plate is technically well treated, may finally become in reality a work of art.

The great efforts made in all quarters to present photographs to the public, which, besides other merits, have artistic value, make it fair to suppose that every little hint given to accomplish the desired results will be accepted by the diligent photographer as well as the conscientious retoucher.—*Fritz Eilender in The Camera.*

THE AMERICAN LANTERN SLIDE INTERCHANGE.

Constitution adopted Nov. 21st, 1893.

ARTICLE I.—*Object.*—The object of this association is to promote the art and science of photography, and the encouragement of art, through the medium of lantern slides, by arranging for their regular exhibition and interchange between different clubs or organizations, for mutual knowledge and benefit.

ARTICLE II.—*Membership.*—Any Photographic Club or Society through its representative, may become a member of the Interchange by submitting to the General Manager on or before November 15th, with its application, a set of not less than fifty

lantern slides, the work of its members, with the initiation fee of ten dollars, which fee shall also suffice for payment of annual dues in case the club is admitted to membeaship. Should such application be rejected by a vote of a majority of the Board of Managers, two-thirds of the initiation fee shall be returned to the applicant. Each member of the Interchange shall contribute annually a set of not less than fifty lantern slides, which shall be submitted as provided in Article V.

ARTICLE III. — *Lantern Slide Directors.* — Section 1. Each society shall elect annually, previous to October 1st of each year, a Lantern Slide Director, who shall take office November 1st next following. The name and address of such Director elect, shall be forwarded to the General Manager of the Interchange by the secretary of the society electing on or before October 1st. Such Lantern Slide Directors shall by mail vote on November 1st of each year, elect a Board of five Managers.

Duties of Lanteru Slide Directors.—Section 2. It shall be the duties of lantern slide directors to retain in their custody sets of lantern slides received for exhibition, to arrange in advance with the officers of their respective clubs, dates for exhibitions, that no set of slides may be retained longer than two weeks. They shall promptly report to the executive officer of the Board of Managers, the date of shipment of slides, the number damaged or missing, and future exhibition dates. They shall prepay the transportation expense on each set of slides unless otherwise directed by the General Manager, and shall render an annual statement of such expenditures on November 1st of each year to the said Board.

ARTICLE IV.—*Board of Managers.*—Section 1. The affairs of the Interchange shall be managed and directed by a Board of five Managers, a majority of whom shall reside in the State of New York.

Duties of the Board of Managers.—Section 2. The Board of Managers shall meet annually in the month of November, and choose from among their number by ballot an Executive Officer, who shall be known as the General Manager of the Interchange, and in the same manner two officers to be known as Assistant

Managers. The General Manager shall receive and disburse all moneys, conduct the correspondence of the Interchange, record votes, keep a record of the movement of slides, arrange for the interchange of foreign sets of lantern slides, and sign and seal legal documents in the name of the Interchange. The Assistant Managers shall assume the duties of the General Manager in case of disability, neglect or refusal to act. They, together with the General Manager, shall constitute an Executive Committee of the Board of Managers.

ARTICLE V.—*Duties of the Executive Committee.*—The Executive Committee of the Board of Managers shall determine the number of slides to be contributed to the Interchange each year; they shall formulate a system of rules governing the progress of the slides accepted for the Interchange, and shall decide how the slides to be sent abroad are to be chosen; also how the foreign slides received in interchange are to be exhibited.

The Executive Committee shall issue a call on September 1st of each year for contributions of slides from each society, which must be shipped to the General Manager on or before the 15th of November following.

On or about December 1st of each year the Executive Committee shall start the slides on the circuit.

It shall be the duty of the Executive Committee to meet annually to determine what portion of the slides contributed by each society shall be sent on the circuit. If move than fifty per cent. of those submitted by any one society be thought unworthy of exhibition the whole number submitted shall be returned to the society sending them, and the society shall be debarred from the privilege of the Interchange for the year.

ARTICLE VI.—*Dues.*—Each society shall, annually, on November 1st, pay to the General Manager the sum of ten dollars. Whenever the funds in the hands of the General Manager shall be reduced to less than twenty-five dollars, each society shall be assessed the sum of ten dollars. The General Manager shall equalize annually the transportation expenses on slides of the different societies by collecting from those whose expenses have been below the average, and refunding to those whose expenses

have exceeded the average. Each member of the Interchange will be held responsible for damage to slides occurring while in its possession.

ARTICLE VII.—*Amendments.*—Suggestions for amendments to these rules shall be made in writing before October 1st of each year and sent to the General Manager.

He shall submit them to the Board of Managers by letter previous to October 15th and the same shall be voted upon at their annual meeting in November.

RULES.—*Sizes, Mats and Labels.*—I. Slides for submission to the Interchange shall not vary more than one-sixteenth of an inch from the standard size of three and one-fourth inches in height by four inches in length, the picture being perpendicular to the four-inch side of the plate.

II. The size of the mat opening shall not exceed three inches in length, nor two and three-quarters inches in height, and the subject shall be centered on the plate.

III. All slides when submitted to the Board of Managers shall bear a label on right end as you look at the positive in its proper position, giving the name of the society or club, name of maker and title of slide, with thumb mark on lower left corner, as shown by accompanying cut.

IV. The thumb label shall bear the invoice number of the slide in lead pencil.

Slides and Negatives.—V. The negatives from which slides are made must be the work of the member submitting the same, and when the slide is not also the member's work it must be so stated.

International Interchange of Slides.—The Board of Managers have arranged for an interchange with foreign photographic societies of England, France and South Africa and with owners of prize sets of foreign slides.

A hundred of our choice slides are selected from the various American sets each year to go the rounds among foreign societies, the slides being eventually returned in about two years to the respective contributing clubs.

SUGGESTIONS BY THE EXECUTIVE COMMITTEE.—*Packing.*—To ensure the safe transportation of slides, and convenience of pack-

ing and unpacking, they should be put in boxes either of metal or wood, lined on each side with wood, or, preferably, rubber grooved strips (the latter will be supplied by the Interchange), or in boxes having transverse divisions, or cells, of card board, having a cushion made with a strip of harness felting glued to the bottom and under side of the cover of the box. When closed and clamped with hooks the cover of the box will hold the slides firmly between the two strips of felting. The outer packing box for holding the grooved boxes should be lined on the bottom and sides with harness felting, which can be obtained from harness shops; the felting may be glued in, or tacked to the box at its edges. The under side of the cover should be lined with similar felting, stuffed out slightly to form an elastic cushion. The cover should be secured by screws, preferably machine screws, entering a nut mortised in the side of the box. No sawdust or excelsior must be used, as it gets on the slides.

Shipment of Slides.—The Executive Committe requires that the *Expressage* on each shipment of slides shall be *prepaid* by the Association sending them.

Selection of Subjects.—It is advisable not to have a repetition of similar subjects in a set, unless it should be necessary for purposes of illustration of a special subject.

In selecting subjects they may embrace original figure compositions, views of local or natural scenery, interesting historical subjects, foreign scenery, flowers, animals, marine views, landscapes, especially artistic views and character studies.

No copies of paintings, reproductions or colored slides should be submitted.

Descriptive Lists.—In the lists of slides, where it is possible, any interesting episode or special matter of interest attached to any picture should be mentioned, that it may be read to the audience when the pictures are exhibited.

Preparing Slides.—In preparing slides see that the mats are neatly and evenly cut, that they are centered nicely on the plate; that the inside edges are parallel with the outside edges of the glass. Black gummed manilla strips of paper, now obtainable in rolls, is advised for binding.

BOARD OF MANAGERS. — (Season 1893–94.) — F. C. Beach, Samuel B. Ward, W. H. Rau, Will H. Olmsted, Harlow H. Boyce.

EXECUTIVE COMMITTEE OF THE BOARD.—F. C. Beach, General Manager, 361 Broadway, New York, W. H. Rau, Assistant Manager, 1324 Chestnut St., Philadelphia, Will H. Olmsted, Assistant Manager, Syracuse, New York.

MEMBERS AND LANTERN SLIDE DIRECTORS.—(Season 1893–94.) Society of Amateur Photographers of New York, F. C. Beach, 361 Broadway, New York; Photographic Society of Phildadelphia, W. H. Rau, 1324 Chestnut St., Philadelphia, Pa.; Orange Camera Club, J. L. Yatman, 333 Main St., Orange, N. J.; Newark Camera Club, F. G. Agens, 10 Academy St., Newark, N. J.; Schuylkill Camera Club, B. S. Simonds, Pottsville, Pa.; Photographic Club of Baltimore City, H. D. Williar, 9 Camden St., Baltimore, Md.; Cincinnati Camera Club, T. B. Collier, 230 West 4th St., Cincinnati, O.; New Orleans Camera Club, E. M. Haskell, 207 Louisiana Ave., New Orleans, La.; California Camera Club, C. F. Cormack, Room 28, Phelan Building, San Francisco, Cal.; St. Louis Camera Club, W. H. Wilcox, 3872 Washington Ave., St. Louis, Mo.; Minneapolis Camera Club, A. L. Eidemiller, 306 Nicollet Ave., Minneapolis, Minn.; Chicago Lantern Slide Club, W. A. Morse, 20 Kemper Place, Chicago, Ill.; Detroit Lantern Club, A. D. Noble, Jr., at foot of First St., Detroit, Mich.; Buffalo Camera Club, H. H. Boyce, 372 Hudson St., Buffalo, N. Y.; Syracuse Camera Club, Will H. Olmsted, Syracuse, N. Y.; Albany Camera Club, M. H. Rochester, Care Embossing Co., Albany, N. Y.; Portland Camera Club, W. C. King, 480½ Congress St., Portland, Me.; Harvard Camera Club, F. L. Olmsted, Jr., 13 Wadsworth House, Cambridge, Mass.

OTHER MEMBERS.—Rockford Camera Club, Rockford, Ill.; Pittsburgh Amateur Photographers' Society.

WHEN the mind, like a pure, calm lake, reflects back the light which is shed from heaven, the image of God is upon it, commensurate with its capacity; for the tiniest drop of dew images forth the truth, though not the full radiance of the sun.—*Bethune.*

THE OHIO CONVENTION.

THE Fourth Annual Convention of the Photographers Association of Ohio will be held at Columbus, Ohio, Aug. 14th, 15th and 16th, 1894. The following list of prizes has been offered for competition. Competition is open to members of the Photographers Association of Ohio only.

CLASS A.—Three prizes, Portraits 11x14 or larger, display limited to twelve pictures: First Prize—One lens valued at $50.00, winner to choose size and make, price not to exceed $50.00; Second Prize—One of Seavey's handsomest Accessories; Third Prize—One Stern Concealed Vest Camera valued at $10.00.

CLASS B.—Three prizes, Portraits 10x12 and under, display limited to twelve pictnres: First Prize—One Seavey Background Carrier with one roll valued at $28.00; Second Prize—One 8x10 Extension Dana Ground; Third Prize—Five gross B. P. (Red Label) Paper.

CLASS C.—Three Prizes, Cabinet Portraits, no limit as to number displayed: First Prize—One of Seavey's Handsome Grounds; Second Prize—10 gross B. P. Paper (Red Label); Third Prize—One Copy Wilson's Quarter Century.

CLASS D.—For 6 Cabinets and 6 8x10 or larger, for Photographers living in cities of 15,000 population and under: First Prize—One Prince R. H. Lens 8x10 size, price $30.00; Second Prize—One 8x10 Background valued at $18.00; Third Prize—One Diploma.

CLASS E.—For twelve Pictures 8x10 and under, Photographers competing in this class must live in cities of 5,000 and under: First Prize—One 8x10 Primer Lens; Second Prize—One Seavey Foreground; Third Prize—Wilson's Photographics.

CLASS F.—Commercial Photography, 6 Pictures 6½x8½ or larger: First Prize—One Case 8x10, Hammer Plate; Second Prize—One Wilson's Photo-Engraving; Third Prize—One Vogel's Progress of Photography.

CLASS G.—Architectural Interiors and Exteriors, Pictures 6½x8½ or larger, display not limited: First Prize—One Year's Subscription to Wilson's Magazine, St. Louis and Canadian Photographers, Review and Pointer; Second Prize—5 gross B. P. Collodion Paper; Third Prize—One Case 5x7 Hammer Plates.

CLASS H.—For best Group, 8x10 or larger: First Prize—5 gross B. P. Collodion Paper; Second Prize—Four volumes Mosaics; Third Prize—Hepworth's Book of the Lantern; One Special Prize—For most tastefully arranged exhibit, One Year's Subscription Photographic Times, $5.00; One Prize—One Case 5x7 Hammer Plates for the most popular Picture.

(The Officers of the Association will not compete for these Prizes.)

LIST OF SPECIAL PRIZES.

G. Cramer Dry Plate Works, St. Louis, Mo. offer two Cases of Plates as follows: First—One Case for the best Portrait exhibit made on the Cramer Plates, brand and size to suit the winner; Second—One Case of Isochromatic Plates for the best work on that Plate.

The American Aristotype Company offer the following: First—$50.00 in Gold for the best display on American Aristotype; Second—$20.00 in Gold for the second best; Third—$15.00 in Gold for the third best; Fourth—$10.00 in Gold for the fourth best; Fifth—$5.00 in Gold for the fifth best. Prints to become the property of the Aristotype Company, display to consist of not less than 12 Cabinets, 12 Paris Panels or larger, and 3 Pictures 13 inches or larger.

The Ilotype Company, of New Brighton, Staten Island, N. Y., make the following offer: First—$50.00 in Cash for the best Pictures made on Ilo Paper, display to consist

of 6 14x17 or larger, and 6 11x14; Second—$30.00 for best display of 6, 8x10 and 12 Cabinets; Third—$20.00 for the best display of 50 Cabinets all on Ilo Paper.

The Standard Dry Plate Paper Company offer two cases (any size) to the Photographer making best display on Standard Plates, any size and number of Pictures.

The M. A. Seed Dry Plate Company offer two Cases 8x10 for the best display on Seed Plates.

CLASS A.—Eastman Kodak Company make the following offer: First—$50.00 worth of Solio Paper for the best display of developed Solio Prints; Second—$25.00 worth of Solio Paper for the second best display. Each Competitor shall make a written statement to the Judges that his Prints were made on Solio Paper and developed, not printed out.

CLASS B.—$40.00 worth of Platino-Bromide Paper for the finest display of Contact Prints on Platino-Bromide Paper; $20 00 worth of Platino-Bromide Paper for the second best display. Each Competitor shall make a written statement to the Judges that his Prints were made on Platino-Bromide Paper and are Contact Prints. Any Competitor failing to comply with request shall forfeit all rights to prizes. Each Competitor shall display at least 6 Pictures and the winning display to become the Property of Eastman Kodak Company.

Thos. H. McCollin & Co., Philadelphia, Pa., offer for the best display of Pictures taken with "Blitz-Pulver," the winning picture to become the Property of Thos. H. McCollin & Co.: First—8 ounces Blitz Pulver for best display; Second—4 ounces Blitz Pulver for second best display.

Carl Earnst & Co., New York, offer 1000 of the small Cabinet Platino Mounts, stamped complete, for the best display of Pictures mounted on their Platino Mounts.

The Heatherington Scenic Studio, Chicago, Ill., offer one set of six Columbian Headgrounds with polished Oak Carrier, for the best Photograph Paris Panel size or larger, made on Heatherington Ground.

Entries to close on Saturday previous to opening of Convention. No space will be allowed for exhibits after that time. All exhibits to be sent, all charges having been prepaid, addressed to A. L. Bowersox, Secretary P. A. of O., Columbus, Ohio.

Rules governing the Judges in awarding the prizes: First posing; Second lighting; Third chemical effects; Fourth general effects or finish.

It is hoped that every photographer in the state will feel it his duty to go right to work in getting up a display. Each one can get up something original, and can, by showing his work, help in the advancement of one of the grandest Arts. The prizes offered are well worth working for.

Judges.—The President to select two members to act as Judges, the Convention select three, then draw three names from the five who shall act as Judges, who shall hand their report sealed to the Secretary, on the second day of the Convention.

All applications for space are to be sent to L. C. Overpeck, Hamilton, Ohio.

Entry blanks for Competitors for the prizes can be obtained from A. L. Bowersox, Secretary, Dayton, Ohio.

THE ST. LOUIS CONVENTION OF THE P. A. of A.

SECRETARY ROSCH writes us that every member of the Executive Board of the P. A. of A. has been faithful to his office, and the present outlook of the Association is truly encouraging.

If energy and push demonstrate progress, (as it always does), the Saint Louis Convention will be handed down as the most memorable Convention held in the history of photography.

Come to St. Louis and be convinced.

Railroad rates will be made in all sections of the country for those who wish to attend the Convention.

The Souvenir Programme will reach you the latter part of June.

Don't be unwise, but join our National Association and be identified as one of the faithful workers.

If you have no large Camera Box you can easily take home a Diploma in class D.

At a meeting of the St. Louis Photographers, Dealers and Manufacturers, held May 4th, much enthusiasm was manifested in the direction of entertaining the visiting members. Contributions to the extent of $2500 were made for that purpose.

The following local Committee was appointed to make arrangements for the Boat Excursion, and all other necessary matters for the entertainment of the visitors.

J. C. Strauss, Chairman, L. F. Hammer, F. Ernest Cramer, J. C. Somerville, Treasurer, H. J. Armbruster, A. S. Robertson, Secretary, M. A. Seed, G. E. Brucker, George S. Bassett.

Don't hesitate, but write to me at once and I will give you full information.

You still have sufficient time to make an exhibit if you interest yourself without further delay.

The Executive Committee have now decided to award a diploma to every exhibitor whose rating is 25 per cent. or over in every class on the list. *Don't miss the St. Louis Convention.*

ECHOES OF THE SEVENTH ANNUAL JOINT EXHIBITION.

MR. ALFRED STIEGLITZ, in a review of the awards made at the late Exhibition, in the *American Amateur Photographer*, states: — "When the names of the judges were announced, the question, 'Who are they?' arose. This has been answered by the list of awards. It came as a thunderbolt, surprising everyone, except a few who had been prepared for the worst. We have been told that their work was done within *four hours! Judging 700 pictures within four hours!* Can the work have been conscientious and thorough? Of course no judging is satisfactory to *everybody;* but, as a rule, it is accepted by the majority."

One of the prize winners, and a prominent one at that, remarked that it was no honor to be in such company, and that although he was happy to receive the award he did not value the same very highly. The same opinion was expressed by a number of other "fortunates."

If the judges did their work conscientiously, they undoubtedly proved their incapacity as judges.

They ignored portraits entirely, and seemed to revel in trivial, every-day work. Some of the awards went to really good, honest work; but the best pictures in the entire exhibition were ignored, probably because they were not understood by the judges."

THE review of the New York Exhibition in the published proceedings of the Philadelphia Society, forms interesting reading, in so far as it is written by one of the two fortunate Philadelphia medal winners. In reviewing the awards, occasion is taken to criticise the work of the different prize-winners rather than the erratic action of the judges. Mention is made of one "as hardly up to the standard of a medal," another as "having few of those points whereby a picture is distinguished from a simple

photograph," or "nothing in this picture to warrant for it a moment's consideration, much less a medal," an "inane and vapid composition," etc., etc.

Referring to the Exhibit of Baron Julius Waldburg, of Vienna, the report states: "'Plowing,' No. 589, shows us a cleverly-lighted bit of landscape, with mountains in the background, but the figures are too nearly in the centre of the plate and staring too intently at the camera to be at all natural. While it is good technically, it is *barren* of any artistic merit."

Now in all fairness, if this is true, what is to be said of the somewhat similar subject exhibited by the critic (No. 212) which was certainly inferior to the Austrian's exhibit. Both pictures were judged by the same questionable standard, and for some unaccountable reason were successful in having a medal awarded. Setting aside the question of taste, if ever there was an exemplification of the old parable of the beam and the mote, it is the review of exhibit 589.

On the subject of "Lantern Slides," the report states: "Miss Mary E. Martin, another medalist for slides, showed some good studies of sheep. Knowing from experience the infinite patience necessary to secure *'etudes du moutons,'* Miss Martin is certainly to be congratulated on her success. Technically her slides might be better, and surely more care in mounting and matting would have been a great improvement."

And so it is through the whole list, according to our Philadelphian Medalist. Evidently, with but few exceptions, all the mediocre exhibits were medaled, while the technically good and perfect work was left out in the cold.

As a fountain finds its expression in overflowing, as a river in rushing to the infinite main, as trees bursting into life and blossom in the springtide, so God feels it his joy to give liberally, and to give above all we can ask or think or desire, for Christ's sake.—*Cumming.*

OUR FRONTISPIECE.

WE present our readers for the present month with a specimen of the "Ilotype," a new collodion paper made by the Ilotype Company, of New Brighton, Staten Island, N. Y. This new candidate for professional favors has been placed on the market during the past year, and has steadily forged its way to the front upon its own merits, as very little has been done by the Company in the way of sending out demonstrators.

The manipulation is one of extreme simplicity, as the printing, toning, and fixing, with the washing and mounting, can all be done in about an hour. The makers of the paper took the precaution to thoroughly test and perfect their paper before placing it on the market, which together with the fact that a uniform standard is maintained, has resulted in its adoption and use by a large number of photographers.

The following simple directions have been issued by the manufacturers. It is requisite to keep the paper in a cool, dry place. Print same as albumen, a little darker than you wish the finished picture, then, without previous washing, immerse in the combined toning and fixing-bath.

Use liberal bath as to bulk and do not place too many prints in the bath at the same time; no more than you can easily watch tone.

The prints should be kept in motion while toning. The first change will be to yellowish-red, then from brown to purplish, and finally to blueish-gray.

Judge the tone by transmitted light. Be careful not to overtone. We think the best results are obtained when the prints are taken from the bath while they are still a warm brown, as they dry slightly bluer than they appear in the bath. A little experience will guide you in this, and you will find you can get almost any tone with this paper.

The toning and fixing will be done in about five to eight minutes.

When the desired tone is reached, separate the prints and immediately give them the final washing in plain water to remove the hypo. Running water is preferable. Wash from forty-five to sixty minutes in running water, or six to eight changes of ten minutes each in still water.

We know some people have a prejudice against the combined toning and fixing-bath. This we can say positively is unfounded, and if

the foregoing directions are followed, we guarantee that better and more permanent results can be obtained with the Ilo paper than with any now known to the photographer.

From the final washing place the prints directly upon the mounting-glass, and let the water drain off, or if in a hurry squeeze the water well out. Then mount and allow them to remain unstacked and untouched by anything until sufficient dry to spot and burnish. Spotting color should be mixed with white of egg (albumen). It is better not to let the prints lie over night before burnishing, but burnish before they are too dry.

The best effects are obtained by using a cold roller first, and then a few minutes later use hot (not too hot) roller for high gloss.

The Ilo combined toning and fixing-solution:

Hot water	½ gallon.
Hypo	16 ounces.
Sulphocyanide, ammonia	2 ounces.
Acetate of lead	6 drachms.
Nitrate of lead	4 drachms.
Citric acid	4 drachms.
Powdered alum	4 drachms.
*Pure Chloride of gold	12 grains.

Dissolve thoroughly, then let stand for twenty-four hours to settle, and use the clear portion. Bath of above proportions will tone and fix 500 to 700 cabinet-size prints.

A Poultry Yard in the Chester Valley.—Our extra illustration is one of those peculiar subjects of every-day farm-life, which, almost invariably fills the heart of the amateur photographer with the desire to take a shot at the scene. Many are taken; but few are ever shown, as the subject is even a more difficult one, than it is to get a good negative of a flea-ridden terrier in August. The beautiful result which we reproduce is from a photograph taken by Mr. F. William Geisse, of Germantown, Penna., a member of the Photographic Society of Philadelphia. The lens used was a Ross "Concentric," stop, 22.6; plate, Stanley No. 50; development, pyro and soda.

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* The gold may be added as soon as the solution is settled, or just before toning in proportion to the quantity to be used.

The Editorial Dropshutter.

Photographic Society of Philadelphia.—According to the treasurer's report, the loss on the Joint Exhibition of 1893 amounted to $187.98; sum paid out for medals and dies for same, $242.00; for new apparatus, $31.01.

In re Society Reports.—Mr. T. J. Burton, Corresponding Secretary of the Society of Amateur Photographers of New York, in a recent letter endorsing our views upon the subject of society reports, published in the AMERICAN JOURNAL OF PHOTOGRAPHY, April, p. 179, strikes the keynote to the subject, where he sets forth the policy of the New York Society, viz.: "We believe the greatest good to the greatest number should be the policy of any individual or organization devoted to the acquisition and spread of knowledge, and to that end we publish notices of our meetings, and invite all who are interested to attend. If this does not reach everyone we try to do it through the various Photographic journals."

The editor of *Photography*, who, on general principles, attacks everything "American," has been writing about Mr. Ives' "alleged" improvement in Composite Heliochromy. He says: "Mr. Ives' modification of the color screens may or may not be an improvement. Dr. Vogel, of Berlin, who is well up in the subject, says that it is not so; so also do Ducos du Hauron, Leon Vidal, and all Continental Europe, so far as we know, who have written upon the subject. Moreover, there have been paper wars in America about his claims. Mr. Ives gave little of a scientific nature in his lectures in England. . . . It is to be hoped that his claims will now be fully and impartially investigated, scientifically, by such men as Capt. Abney, Dr. Stolze, Dr. Vogel, Mr. C. H. Bothamley and others." The ignorance, if not worse, displayed by the editor of *Photography* in this attack upon Mr. Ives, is something phenomenal. He ought to know, and can have no valid excuse for not knowing, that Captain Abney, the only first-class scientist named, and whose own original investigations in photographic physics and color science make his judgment in this matter of immeasurably greater value than that of all the others put together, has already indorsed every claim that Mr. Ives makes for the scientific character and accuracy of his method, in every detail in which it

differs from the old methods; and also, that Capt. Abney never had a word of praise for any work of this character until he saw that done by Mr. Ives, for which he has since taken every opportuniny to speak words of praise. The editor of *Photography* eagerly quotes from attacks made upon Mr. Ives by prejudiced and envious rivals, but, although obliged to place Capt. Abney at the head of his list of investigators, he ignores that gentlemen's testimony, and evidently would blot it out if he could. The idea of making up an investigating committee of Dr. Vogel, Leon Vidal and Dr. Stolze is almost hilariously funny, because, although they all oppose Mr. Ives (for obvious reasons?), they do not agree with each other upon the science of this subject any better than they do with Mr. Ives, but each poses as an authority in opposition to all of the others. Capt. Abney's opinion of the sort of criticism Mr. Ives' admirable work is being subjected to by "investigators" of this class is sufficiently indicated by his references to the communication from Leon Vidal in the recent discussion at the Camera Club, which we printed an abstract from last month. The assertion that Mr. Ives "gave little of a scientific nature in his lectures" would sound differently if it had been made by anybody but the victim of the hydroxyl-monohydride hoax. One must know something of science in order to recognize it.

The Kirkland Lithium Paper Company have removed to Denver, Col., during last May, where with new machines and increased shipping facilities they expect to be better able to take care of the rapidly growing business. Owing to the increasing demand for their lithium paper in the eastern section of the country, they have found it necessary to establish an agency in Chicago, No. 84 Adams Street. A fresh stock of paper can always be obtained, and any questions or pointers will be cheerfully given.

New Catalogue.—The Carbutt Keystone Dry Plate and Film Works have issued a new catalogue and a reduced price list. In the introductinn they state "Taking into consideration the fact that the cost of the principal raw materials used in the manufacture of dry plates has fallen considerably within the past year and through the introduction of improved machinery in all processes, their capacity has been wonderfully increased, so they have decided to make another, and, as they believe, final general reduction in the price of dry plates, which is hereby presented to their patrons, trusting that they will appreciate the desire to make their interests identical with the Keystone plates.

Photographic Hints and Formulæ.

Packing Exposed Plates.—The following remedy is given for plates which have been damaged by the film having come in contact with printed paper, and have in consequence received an impression. They should be washed for some time in a from two to four per cent. solution of glacial ascetic acid, then well washed, immersed in alcohol, and developed in a vigorous developer.

Photography in Colours.—The drawback to plates prepared by the Lumière or Valenta process for color photographs is that the means taken to secure the grain being sufficiently fine, results in the plates being very slow. So slow is this emulsion that a plate exposed in a sensitometer for five minutes to a light of 50 candle power scarcely shows the first number. Valenta finds, however, that the addition of 1 gramme of sodium sulphite to 300 c.c. of emulsion with subsequent heating at 38° C. results in five minutes in an emulsion showing the fourth number on the sensitometer, or the eighteenth number in an hour.

Boric Acid Nitrate of Lead in Toning and fixing Baths. Dr. Krügener confirms the statement of Gaedicke that boric acid does not bring about the deposit of sulphur. Nitrate of lead, however, thoroughly neutralized by means of borax, causes a precipitate of lead sulphide when in the presence of hyposulphite, containing as it frequently does other complex sulphur compounds. With chemically pure hyposulphite the formation of lead sulphide does not take place. He recommends in consequence the addition of borax to toning and fixing baths both to hinder the formation of lead sulphide and to neutralize any free acid in the prints. It is unnecessary to wash prints before toning · they can be immersed direct in the following solution—

Sodium hyposulphite	200 grammes
Ammonium sulphocyanide . . .	20 "
Borax	5 "

dissolved in 800 c.c. of boiling water to which is added 30 grammes of crystallised boric acid, dissolved in 150 c.c. of boiling water and 15 grammes of lead nitrate dissolved in 50 c.c. of cold water. The solution is left for 24 hours and then filtered, when ·6 c.c. of a 1 per

cent. solution of gold chloride or 1 c.c. of a similar solution of gold and potassium chloride is added. After toning it is advisable to immerse the prints for ten minutes in a 5 per cent. solution of hypo to make certain of eliminating all the silver hyposulphite.

Bromide Prints in Various Colors.—According to the *Photographisches Archiv*, bromide prints may be colored in the following different ways:

The prints are feebly developed with eikonogen, fixed, washed, and then immersed in a solution of—

Nitrate of lead	4 parts.
Red prussiate	6 parts.
Water	100 parts.

This bleaches the image, which may then be colored, thus:

BROWN.

Schlippe's salt	10 parts.
Ammonia	5 parts.
Water	150 parts.

YELLOW.

Neutral chromate of potash	4 parts.
Water	100 parts.

GREEN.

Immerse the yellow prints in—

Iron perchloride	1 part.
Water	10 parts.

RED.

Immerse the yellow prints in—

Chloride of copper	1 part.
Water	10 parts.

NICKEL GREEN.

Chloride of nickel	1 part.
Water	10 parts.

ORANGE.

Mercury bichloride	3 parts.
Potassium iodide	4.5 parts.
Water	100 parts.

Medium for Albumen Colors.—The *Bulletin Belge* gives the following formula as an excellent medium for mixing colors to work on albumen prints:

Clear Albumen	100 g.
Sal-ammoniac	5 g.
Glycerine	5 g.
Ammonia	4 drops.
Water	25 cm.

The dry color is ground up in above solution, and is then ready for use.

Metol Potash Developer.—

A.	Distilled water	1000 parts.
	Neutral sodium sulphite	100 parts.
	Metol	10 parts.
B.	Distilled water	1000 parts.
	Carbonate of potash	100 parts.

For use

Metol, solution A	70 parts.
Potash, solution B	20 parts.

For slower development, if very soft pictures are desired, the solution can be varied as follows:

Metol, solution A	60 parts.
Potash, solution B	10 parts.
Water	20 parts.

Matt-Surface Paper.—A few years ago this term was applied almost exclusively to paper prepared on similar lines to albumenized paper, but with a small quantity of arrowroot, gelatine, or some similar substance in the place of the albumen, so that the sensitive paper and the finished print had a "matt" surface, or one which did not possess the glossy appearance characterizing the ordinary albumenized prints. It can now be applied with equal propriety to bromide or to a printing-out paper if of such a nature that the resulting print does not possess a shiny surface.

New Reducer for Chloride Prints.—Valenta suggests the following method for reducing gelatino and collodio chloride prints. (A) cold saturated solution of hypo (B) 10 per cent. solution of uranium nitrate are used.

Solution A	20 parts.
Water	80 parts.
Solution B	1 part.

This can be used before toning, which it does not affect.

Photographic Scissors and Paste.

Lectures on Color Photography.—Under the auspices of the Affiliated Societies, Mr. E. J. Wall delivered two lectures, on Monday and Friday last, on "Color Photography." The Cordwainers' Company kindly placed their hall at his disposal for the purpose, and Sir H. Trueman Wood (President of the Photographic Society of Great Britain), took the chair on both occasions. About 170 attended the first lecture. In opening his subject, Mr. Wall explained the formation of color, projecting a spectrum and showing the effect of natural bodies in absorbing and reflecting certain colors. The history of the attempts to form photographs in colors dated from 1782, when Senebier recorded the first attempts. He was then followed by Seebeck in 1810, Herschel in 1839, Hunt in 1840, Becquard in 1848, Niépce de St. Victor, Poitevin, Baer, St. Florent, Veress and Kopp.

It was pointed out that these attempts were without permanent results, as no means had been found of fixing the colors. The sensitive salts of silver which were used could not be fixed by the ordinary photographic methods, the chemicals used for this purpose destroying the colors. In 1891, Dr. Lippmann, of Paris, announced that he had obtained photographs in natural colors which were absolutely permanent. The disposition of the apparatus used by Lippmann was shown, and then the explanation of the formation of these colors, which are entirely due to the silver being deposited in laminæ of definite distances apart, which reflect the particular colored light, which had a wave-length double that of the thickness of the silver deposit. The advances made by Lippmann, Lumière, and Valenta were set forth, and the lecturer concluded by showing specimens by Lippmann and Valenta, which proved that the problem was once for all settled, but that these so-called photographs in natural colors possessed of themselves absolutely no color. All that they did was to analyze the light incident on them, and reflect the particular color.

On Monday, before an undiminished attendance, the lecturer devoted the second lecture to "Heliochromy," or the process of producing reproductions of objects in their natural colors by means of the synthesis of light, and performed some interesting experiments with a triple lantern, making white and all different colored lights on

the screen. The history of the process showed that her Majesty's drawing-master, Henry Collen, made the first suggestion in 1865, and was followed by Ransonnet, Ducos du Hauron, Cros, and others, but that their attempts were futile, in that, at that time, there was no method known of making the silver salts sensitive to all colors. Vogel's discovery, in 1873, of a process for this purpose, rendered the task much easier. In 1889 Mr. Ives, of Philadelphia, commenced his researches, and, throwing over Brewster's theory of the three primary colors, and adopting Clerk Maxwell's theory of three-color sensations, was success in producing lantern slides and prints by three colors, which faithfully reproduced the colors of nature. The practical method of doing this is to make three negatives through various colored screens, allowing the different colored rays of the spectrum to act on the plates in definite proportions. From these negatives are made lantern slides, which are projected through glasses corresponding to the three primary color-sensations, and the results are reproductions in all the colors of nature. Mr. Ives, of Philadelphia, who has made the greatest advances in this work, uses a special instrument called the photochromoscope, which enables the three images to be examined through an eyepiece by daylight, and the results shown in this are superior to that of lantern projection. The formation of white light on the screen was shown by mixing red, green, and violet lights. The most important application of this process—the production of prints—was treated very fully, and it was pointed out that the finest results were to be obtained by means of Woodburytype printing, and that collotype was commercially useless, as it was almost impossible to ensure perfect results, as the balance of colored inks could not be kept. The method of making process or typographic blocks was then explained, and, after numerous technical data as to the preparation of the colored screen, the negatives, etc., a large number of specimens, contributed by Messrs. Waterlow, Hare, Weissenberger, the Photochrome Company, and others, arranged round the room, were described. Mr. Ives's photo-chromoscope was also shown.

Votes of thanks to the Cordwainers' Company and Mr. Wall concluded the proceedings.

HAPPINESS may fly away, pleasures pall or cease to be obtainable, wealth decay, friends fail or prove unkind; but the power to serve God never fails and the love of him is never rejected.—*Fronde.*

Exploration Beyond Hudson Bay.—There is a very considerable field yet to be explored in the heart of our own continent. This fact is strikingly illustrated by the recent noteworty expedition of Mr. Joseph B. Tyrrell, accompanied by his brother, Mr. J. W. Tyrrell, and several Canadian Indians. Mr. J. B. Tyrrell is a highly distinguished young Canadian surveyor and geologist, who has been engaged in various explorations in the far Northern territories of Canada, and who has, indeed, spent most of the past eleven years in scientific and geographical work in the vast region lying northwest of Winnipeg. The district known by the name of the Barren Lands, lying between the Athabasca river and the Great Slave Lake and Hudson Bay on the east, has never until now been traversed, so far as is known, by any human foot. The Canadian authorities at Ottawa desired to learn what there might be in the way of fur-bearing animals or mineral riches in this region, comprising 200,000 square miles. To Mr. Tyrrell was accordingly assigned the task of crossing that country and reporting upon its character and resources. His expedition started from Edmonton, in Alberta, last May, proceeding down the Athabasca river by canoes, through Lake Athabasca, up the Black river; and thence, partly following streams and lakes and partly traveling on foot, the party pressed on to Chesterfield Inlet, on the west side of Hudson Bay, reaching that point about September 1. They were certainly the first white men who had ever crossed this great stretch of many hundreds of miles from the Athabasca basin to Hudson Bay. The return was along the shore of Hudson Bay to Fort Churchill, resulting in a great change of previous ideas as to the conformation of that large body of water. From Fort Churchill the route was southward to Winnipeg. The total trip, two-thirds of which was by canoe, covered a distance of 3,200 miles. Lieutenant Tyrrell reports that the barren lands are valueless, so far as fur-bearing animals are concerned, and that their mineral value remains yet in doubt. The expedition was a highly important one, and its successful conduct reflects great credit upon the Messrs. Tyrrell.—*From "The Progress of the World," Review of Reviews.*

Photographic Rembrandt effects are very flattering and pleasing, and have often led to business.

Snapshots sometimes win medals, but medal-hunters do not always turn out the best work.

Dare to go forward.

Society Notes.

The Photographic Society of Japan.—An ordinary meeting of the above mentioned Society was held at the rooms of the Geographical Society (Chigaku-Kiokai), Nishikonya-cho, Kiobashi-ku, Tokyo, at 5 p.m., on Friday, March 16th, Mr. H. G. Parlett in the chair.

The minutes of the last meeting having been read and approved, were passed; Mr. T. Konishu and Mr. R. Hamilton were unanimously elected members of the Society.

Mr. I. Tanaka showed a collotype from a group taken with the new Goetz double anastigmatic lens. This was of particular interest as being the first specimen of work done here by this, the latest outcome of the new Jena optical glass.

Mr. W. K. Burton then showed Dallmeyer's newest form of tele-photographic lens. If he had known that Mr. Kajunta was going to disappoint them in the matter of his promised views of Fuji, he (the speaker) would have brought samples of the work of the new lens, and have given a full explanation of its working. This he would do at the next meeting. In the meantime, he would only say that the new lens seemed to reduce tele-photography to the greatest simplicity it could be reduced to.

Messrs. W. K. Burton and M. Kondo then gave a demonstration of the "Carbon," or pigment process.

After Messrs. Burton and Kondo had finished their demonstration, members of the Society who had never worked the carbon process were invited to try their hands in developing a number of exposed prints that remained over. This several members did, with perfect success, demonstrating the ease with which the process may be learned.

The proceedings ended with a vote of thanks to the Chairman.

California Camera Club.—The annual meeting of the California Camera Club was held in the Club Rooms, Academy of Science Building, April 4th, 1894. Reports from the officers were read, showing the condition of the Club. The President's remarks were of a general nature, as he left the details to the other officers. He called attention to the social aspect of the Club as something which could not

be touched upon by the latter, and advised an increase in the number of smokers and ladies' nights, which have proven so pleasant the past year.

The Secretary's report showed that in spite of the dull times the Club holds its membership well. There are now on the roll some four hundred of the various classes. The Treasurer announced cash on hand $550.00.

The library of the Club is now in fine condition. For two years the Board of Directors have appropriated a fixed sum each month for the purchase of new books, and the Club now owns over two-hundred volumes, covering every branch of photography. Every first-class photographic magazine published in the English language is kept on the tables.

During the year the Club has given twelve lantern slide exhibitions, free to members and their friends.

One of the most interesting reports was that of the House Committee. The developing rooms have been re-modeled, and incandescent lights introduced into them and all the rooms of the Club. An arc light of six thousand candle power has also been fitted in the bromide room for enlargements and lantern slides. An entirely new room, fifty feet by eighteen, has been erected on the roof of our present quarters. Ten feet of this is partitioned off for printing purposes, and allows sunlight at all hours of the day. The remaining space, forty by eighteen, is used as a portrait studio. It has a fine north side light and a sky light, and dressing and developing rooms are attached. A large part of the Treasurer's surplus is to be immediately expended on backgrounds and other accessories. When these are in place very few professionals will have as fine an operating room, or as many conveniences, for all sorts of photographic work, as the members of the California Camera Club. We shall be pleased to put these rooms at the service of members of other clubs visiting our city.

The election has excited great interest, and the largest vote in the history of the Club was polled, which resulted in the election of Chas. Albert Adams, President; H. C. Tibbitts, First Vice-President; W. J. Street, Second Vice-President; Geo. W. Reed, Treasurer; C. F. Cormack, Secretary; H. C. Owens, Librarian. Unanimous re-election, C. S. Close, Corresponding Secretary; W. E. Goodrum, W. B. Webster, T. H. Jones, F. W. Fuller.

After passing a vote of thanks to the old officers the meeting adjourned.

Maintain your integrity as a sacred thing.

In the Twilight Hour.

PURITY is power.

ALL wickedness is weakness.—*Milton.*

VICE and vigor walk not long together.

THE sower of wild oats will reap a wild harvest.

EVERY act of obedience is a step toward God.

NOTHING becomes too bad for him who has lost self-respect.

WHEN injury begins on another's part, let kindness begin on ours

THERE are only a few peopls who do not talk too much—they are dumb.

LET the getting of money be your ideal, and you will grow toward the dust.

HABITS of evil, at first as gossamer threads, soon become forged links of steel.

IF, with cheerful courage, we submit ourselves to God, no affliction is unbearable.

WHEN the devil fishes he knows that there is no time lost by being careful about his bait.—*Ram's Horn.*

FIRST recognize what is true; we shall then discern what is false, and properly never till then.—*Carlyle.*

IT is a sad weakness in us, after all, that the thought of a man's death hallows him anew to us; as if life were not sacred too. —*George Eliot.*

DON'T snub a boy because he wears shabby clothes. When Edison, the great inventor, first entered Boston he wore a pa r of yellow linen breeches in the depth of winter.

THEY who have no regard for God fail in love toward men

A SOFT answer is better than hard words for breaking stony hearts.

TROUBLE drives us to prayer, and prayer drives away trouble.

HE who has a heart of love, will work the works of love, will speak the words of love.

GOD always gives us strength enough, and sense enough to do what he wants us to do, if we ask him.

LOOK not forward to the changes and chances of life with fear; but rather with trust that God, whose you are, will deliver you out of them.

THAT state is best in which we exercise highest faith, and fullest resignation to God. God guides us in a sure path—it may be a rough one—and he will bring us safely home at last.

DO NOT be c iscouraged with your faults; bear with yourself in correcting them, as you would with your neighbor. Lay aside this ardor of mind, which exhausts your body, and leads you to commit errors. Accustom yourself gradually to carry prayer into all your daily occupations. Speak, move, work, in peace, as if you were in prayer, as indeed you ought to b Do everything without excitement, by the spirit of grace. As soon as you perceive your natural impetuosity gliding in, retire quietly within, where is the kingdom of God. Listen to the leadings of grace, then say and do nothing but what the Holy Spirit shall put in your heart. You will find that you will become more tranquil, that your words will be fewer and more effectual, and that, with less effort you will accomplish more good.—*Fenelon.*

Literary and Business Notes.

THE "COSMOPOLITAN."—The secret of the great success of *The Cosmopolitan* is not so hard to find, if one will look carefully over the number for February. A story by Valdés, the famous Spanish novelist, the first from his pen to appear in any American magazine, is begun in this number. Arthur Sherburne Hardy's story, "A Rejected Manuscript," is charmingly illustrated by L. Marold, who we believe makes his first appearance in the magazines on this side of the water. A profusely illustrated article on the designing and building of a warship appeals to the interest taken by all in the new navy, and a thrilling description of a naval combat under the significant title: "The Meloban and the Pentheroy," describes, after the manner of the Battle of Dorking, a possible sea-fight, the out-come of which is watched by the entire naval world. "Gliding Flight" is an interesting contribution to the problem of aerial navigation by one who has studied the flight of soaring birds in the East for twenty years. Elaine Goodale, who married a member of the Sioux nation, has some interesting information of Indian Wars and Warriors T. C. Crawford, the Washington correspondent, gives the first half of a startling story, under the title of "The Disappearance Syndicate." The poetry in this number by Sir Edwin Arnold Graham R. Tomson and William Young, is unusually good. The Departments, "In the World of Art and Letters" and the "Progress of Science" continue to have as contributors men famous in both continents.

HAND-BOOK TO THE PHOTOCHROMOSCOPE. By its inventor, Frederic E. Ives. Simpkin, Marshall, Hamilton, Kent & Co., Ltd., London, 1894.

A pamphlet of fifty pages, giving full information about the photochromoscope, together with chapters on the nature of light and theory of color by various authorities. The work is illustrated with engravings of the photochromoscope, the photogram, and the interior mechanism, and forms an interesting contribution to photographic literature.

WE take pleasure in mentioning as an addition to the "Bibliotheque Photographique" Series, "Les Contretypes ou les Copies de Cliches." Par George Balagny. Paris, Gauthier-Villars et fils, 1893. Pp. 44.

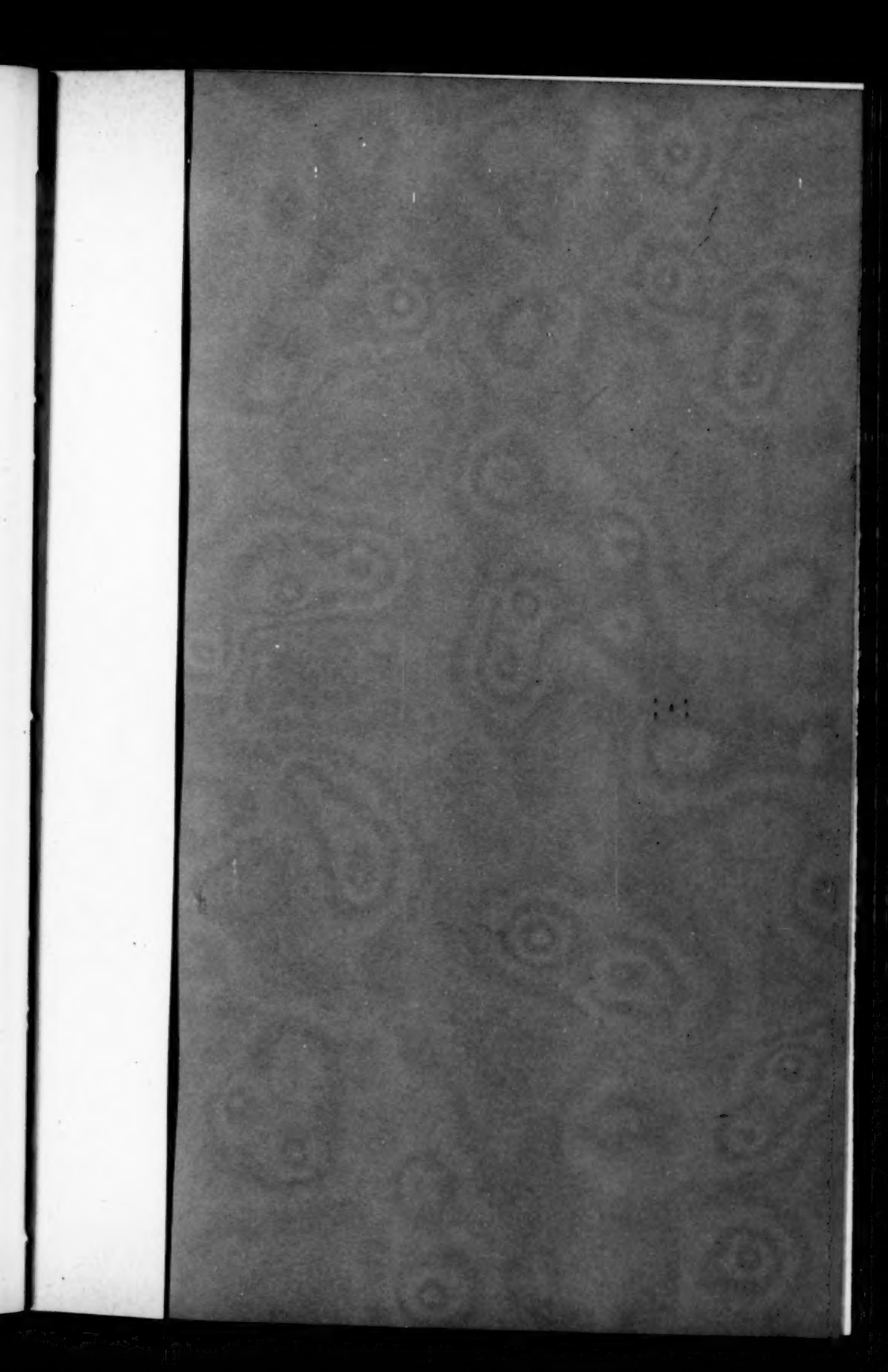
NEW YORK, Nov. 20th, 1893
37 Union Square,

Walpole Dye & Chemical Co.

DEAR SIRS:—We have tried the sample keg of Walpole Hyposulphite of Soda, and find it superior to any we have used for a long time.

Very truly yours.
(Signed) Napoleon Sarony.

"THE Progress of the World" of the *Review of Reviews* contains a timely discussion of the question why the English game of politics is more exciting than the American game. This question is suggested anew by the resignation of Mr. Gladstone and the intense interest aroused by that episode among Americans, to the partial neglect of Washington potitics. Other topics covered in "Progress of the World" are the Seigniorage bill, filibustering in Congress, the outlook for bimetalism, the Wilson bill in the Senate, Louisiana and free sugar, the Senate report on Hawaii, the triumph of the Brazilian republic, the Bluefields incident, the prosecution of election crimes, the present positions of the Democratic and Republican parties, the fight against the House of Lords, the Russo-German commercial treaty, the services of the late Dr. Poole of Chicago, the death of Louis Kossuth, and many matters of international interest.



PLATINO BROMIDE.

NEGATIVES BY
W. CURTIS TAYLOR & CO.
PHILADA.

PAPER MADE BY
EASTMAN KODAK CO.
ROCHESTER, N. Y.

LAFAYETTE.

A PHOTO-MECHANICAL REPRODUCTION OF A PAINTING IN THE ORIGINAL COLORS BY THREE IMPRESSIONS FROM RELIEF PLATES.

A SPECIMEN OF COMMERCIAL WORK FROM THE PHOTO-CHROMOTYPE COMPANY OF PHILADELPHIA.

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